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BEE CULTURE INVESTIGATIONS

James I. Hambleton, in Charge

Dr. A. P. Sturtevant and J. E. Eckert, of the Intermountain Bee Culture Field Laboratory, Laramie, Wyo., attended the meeting of the Colorado Beekeepers' Association, at La Junta, on November 13 and 14. Doctor Sturtevant spoke before the meetings of the Montana State Beekeepers' Association, held at Billings, Mont., on November 19 to 21; and the Wyoming State Beekeepers' Association, at Thermopolis, held November 22 to 24. Mr. Eckert also attended the meeting of the recently organized Colorado-Wyoming Academy of Science, held at the University of Denver on November 30.

Dr. Warren Whitcomb, Jr., of the Southern States Bee Culture Field Laboratory, Baton Rouge, La., attended the meeting of the Alabama State Beekeepers' Association, at Montgomery, on November 14. On November 15 a field meeting was held at Andalusia, Ala., where members of the Association inspected the bee-supply plant of the Andalusia Manufacturing Company. Doctor Whitcomb reports that the meeting was well attended, and that great interest was manifested in the establishment of United States standards for package bees.

The use of formaldehyde gas for disinfecting combs infected with American foulbrood has been recommended rather strongly during the last year in a number of articles appearing in some of the bee journals. Years ago Dr. G. F. White, of the Bureau of Entomology, tried formaldehyde gas for disinfecting American foulbrood combs. Although he found that it was possible to kill the spores of Bacillus larvae with the gas, no practical method presented itself for subjecting the combs to treatment which gave uniform results, and therefore the hope of devising a method that could be used by the beekeeper was at least temporarily abandoned. The articles referred to, however, have stimulated a great many beekeepers to use formaldehyde gas in an effort to disinfect combs infected with foulbrood. Practically all samples of combs which have been subjected to the gas, and afterwards submitted to the Bee Culture Laboratory for culturing, indicate that sterility is by no means complete, and that the method as it has been advocated by a few beekeepers can not be recommended.



## TAXONOMIC INVESTIGATIONS

Harold Morrison, in Charge

Dr. H. W. Allen, of the Japanese Beetle Laboratory, who, with H. A. Jaynes, has recently made an intensive study of the eastern Asiatic species of *Tiphia* accumulated in the course of the work of collecting parasites of the Japanese beetle, was in the Museum November 1 and 2, and deposited a considerable series of specimens of the genus in the collection of Hymenoptera.

A. K. Wyatt, of Chicago, an entomologist interested in Lepidoptera, recently spent a few days at the Museum examining material with A. Busck.

Dr. W. V. King, of the Bureau of Entomology, who has been engaged in mosquito work at Mound, La., visited the Museum November 10 to study species of the genus *Anopheles*. Dr. King has an appointment from the International Health Board to visit the Philippine Islands, where he is to make a special study of mosquitoes of this genus. He will spend several months in field work in the Islands, and will then return for a critical study of his material.

Dr. F. F. Russell, Director of the International Health Board, Rockefeller Foundation, together with Prof. Missiroli and three other Italian experts on malaria, called on November 15 to consult Dr. Dyar.

R. C. Mundell, of Brisbane, Australia, and E. Mortenson, of Texas, engaged in investigations of insect enemies of the prickly pear in the Commonwealth of Australia, stopped in Washington November 15 to consult with W. S. Fisher and to obtain determinations of material. They were on their way to South America in search of insects destructive to the prickly pear cactus.

On November 19 Dr. C. H. T. Townsend, of Lima, Peru, and formerly of this Bureau, arrived in Washington, and will spend a month examining genotypes of muscoid flies. He has recently made similar studies in the European museums, and has in progress a large work on this group.

Dr. S. B. Grubbs, of the United States Public Health Service, called November 19 to consult with Dr. Dyar in regard to the habits of the mosquito *Aedes aegypti*. The matter under consideration relates to the establishment of new rules for fumigating ships in the Canal Zone.

Dr. H. L. Parker, of the Corn Borer Laboratory, Hyères, France, called at the Museum November 20 to discuss with the Bureau specialists various phases of his investigations, especially those dealing with hymenopterous parasites.

W. H. W. Komp, of the United States Public Health Service, who is on his way to Almirante, Panama, to undertake under Dr. Barber studies relating to malaria, recently spent several days at the Museum studying the mosquitoes with which he is likely to deal there.



Prof. Z. P. Metcalf, of the Zoology Department of North Carolina State College of Agriculture, at Raleigh, recently spent a week in the Museum studying the collection of Hemiptera, with particular reference to recording specimens from the State of North Carolina.

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#### CEREAL AND FORAGE INSECT INVESTIGATIONS

W. H. Larrimer, in Charge

Dr. Filippo Silvestri, of Portici, Italy, on his way home from the International Entomological Congress at Ithaca and further travel in the United States, visited the European Corn Borer Parasite laboratory at Hyères, Var, France, on November 16.

In the first week of November R. A. Blanchard, in charge of the field laboratory at Sacramento, Calif., made a trip into the Antelope Valley, on business relating to the alfalfa aphid.

Dr. Harry L. Parker, in charge of the European Corn Borer Parasite Laboratory, located at Hyères, Var, France, is spending a brief time in America in consultation with the various officials with whom he is in constant correspondence relating to the collection, rearing, and distribution of parasites of the European corn borer.

H. S. Peters, of the Division of Insects Affecting Man and Animals, visited the field laboratory at New Orleans on November 14, and, with T. E. Holloway, in charge of that laboratory, made a number of inspections of dairy cattle for the ox warble.

Dean J. H. Skinner, of Purdue University, LaFayette, Ind., made a brief visit to the Washington office on November 22.

S. J. Snow, of the alfalfa weevil field laboratory at Salt Lake City, was employed during the greater part of November investigating conditions in alfalfa meal mills at Ogden, Utah.

On November 27 M. M. Darley, of the alfalfa weevil field laboratory, traveled by freight train from Ogden to Salt Lake City to observe the reactions of adult weevils under the conditions obtaining in freight cars in motion.

In the latter part of November Claude Wakeland, Entomologist of the Idaho Agricultural Experiment Station, visited the field laboratory at Salt Lake City to confer with George I. Reeves, in charge of alfalfa weevil investigations.

A. A. Mathewson has been transferred from the corn borer field laboratory at Toledo, Ohio, to the field laboratory at San Antonio, Tex.



## FOREST-INSECT INVESTIGATIONS

F. C. Craighead, in Charge

J. M. Miller made a field trip to the Prescott National Forest in November to check up the results of a control project which was conducted last winter and spring against an increasing infestation of Dendroctonus barberi Hopk. This is the first control project ever attempted against this species of Dendroctonus. The first year's results have been highly satisfactory, and it is recommended that the work be extended next year.

W. H. Larrimer, in charge of the Division of Cereal and Forage Insect Investigations, and D. J. Caffrey, of the same division, visited the Gipsy Moth Laboratory on October 24. Other recent visitors to this laboratory were M. F. Crowell, of North East, Pa., on November 7; R. G. Smith, Inspector of the Plant Quarantine and Control Administration, stationed in New York City, on November 16; E. G. Woodward, Agent in Blister Rust Control, Warrensburg, N. Y., Raymond Paige, Fort Ann, N. Y., and W. S. Codman, Eldred, N. Y., on November 21.

C. W. Collins was in Washington November 21 to 23, conferring with members of the Bureau of Entomology, and especially with Dr. F. C. Craighead, in charge of the Division of Forest Insects, regarding the work of the Gipsy Moth Laboratory. Mr. Collins, while on this trip, stopped in New Jersey to confer with Dr. R. W. Glaser, of the Rockefeller Institute for Medical Research, and H. A. Ames, of the Plant Quarantine and Control Administration, regarding investigational work on the gipsy moth.

Many entomologists are more or less unfamiliar with the present classification of the groups which comprise the termites or white ants. Frequently the family Termitidae is referred to in literature as an equivalent for the order Isoptera; formerly only one family, Termitidae, was recognized, and most termites were referred to as species of Termes. At present the order Isoptera is separated into five families. Representatives of three of these families occur in the United States. Species in the genus Termes occur nowhere in the Americas.

To refer to the genus Termopsis as being in the family Termitidae is as great an error as to refer to a genus in the Buprestidae as belonging to the family Cerambycidae. To use the family Termitidae as equivalent to the order Isoptera may be regarded as the same as using the family Scolytidae for the entire order Coleoptera.

Appended is a tabulation of the order Isoptera according to families, genera, subgenera, and species.



# ISOPTERA

## Termites of the world (excluding fossils)

Families	Genera	Subgenera	Species
Mastotermitidae	1	0	1
Hodotermitidae	1	3	29
Kalotermitidae	7	14	235
Rhinotermitidae	9	5	145
Termitidae	48	62	1,236
5	66	84	1,646

## INVESTIGATIONS OF INSECTS AFFECTING MAN AND ANIMALS

### F. C. Bishopp, in Charge

On November 13 F. C. Bishopp left Washington for Dallas, Tex., to confer with the investigators in the field laboratory there and aid in the planning of work to be conducted in the near future. During the following two weeks he visited the field laboratories at Sonora and Uvalde, and conferred with authorities of the Texas Experiment Station in Sonora and the representatives of the Plant Quarantine and Control Administration and the Biological Survey in San Antonio.

A meeting with a huge barbecue, roping contest, and other typically western entertainments was held at the Devils River Ranch of Congressman Claude Hudspeth, 30 miles north of Comstock, Tex., on November 17. The meeting was called to discuss ways and means of reducing losses from the screw worm and wool maggots. About 1,000 representative ranchmen of western Texas were present. Secretary Jardine and Dr. Mohler were invited to address the gathering, but neither could be present. F. C. Bishopp represented the Bureau of Entomology, and discussed the work which the Bureau has been doing in developing measures for control of the screw worm. O. G. Babcock also attended the meeting.

For the purpose of testing a number of insecticides in control of cattle grubs, the available field men were concentrated at Dallas, Tex., in the latter part of November, for work during the month of December. H. S. Peters and R. W. Wells, of the field laboratory at Beltsville, Md., E. C. Cushing, of the field laboratory at Mound, La., and W. G. Bruce of the one at Fargo, N. D., are the men engaged in this work.



W. V. King, in charge of the field laboratory at Mound, La., went from there to Washington about the middle of November to confer with the Chief of the Bureau.

Visitors during the month of November at the Washington office included Professor C. E. Sanborn, Entomologist of the Oklahoma Experiment Station, Dr. Edward Francis, of the U. S. Public Health Service, and Messrs. Mondell and Mortenson, agents of the Australian Prickly Pear Board. The two last named were on their way to South America, Mr. Mortenson to Brazil and Mr. Mondell to Peru, for the purpose of scouting for promising cactus insects. Incidentally, their intention had been to book passage on the ill-fated S. S. Vestris, but they were unable to get ready for departure by the time the vessel sailed.

D. C. Parman, of the field laboratory at Uvalde, Tex., who has spent several weeks in California studying control measures for the sand fly Hippelates flavipes, returned to Uvalde November 24.

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#### STORED-PRODUCT INSECT INVESTIGATIONS

E. A. Back, in Charge

The second consignment of eggs of the Angoumois grain moth, Sitotroga cerealella, to the Barbados Department of Agriculture, for use in rearing Trichogramma parasites of the sugar-cane moth borer, Diatraea saccharalis, was shipped from New York November 24 on the S. S. Voltaire. The eggs were obtained at the field laboratory at Sligo, Md., by C. W. Ellington, who took them to New York and placed them on board the steamer. They were to have been shipped on the S. S. Vestris, which was sunk November 12; fortunately, the difficulty of obtaining these eggs so late in the season caused a delay which resulted in preventing their loss.

A copy of "Essentials of Upholstery," by H. L. Bast, was received in October, with the compliments of the author. The last chapter of the book, dealing with insects affecting furniture, is of interest because of the illustrations furnished by this Bureau. Credit to the Department of Agriculture is given in the introductory chapter.

At the 1928 Institute of California Fig Growers, held at Madera on October 25, Perez Simmons, in charge of the field laboratory at Fresno, was named to assist the 1929 Fig Institute Committee in preparing a program for the coming year.

On November 13 the Chicago, Rock Island and Pacific Railway Company obtained from Dr. Back a deposition regarding facts relating to the biology of certain grain pests.



By invitation of Director G. H. Hecke, of the California State Department of Agriculture, dated November 15, Perez Simmons has become a member of the "California Clean-Up Committee," an organization for dealing with pests affecting the fig industry. E. A. McGregor, in charge of the field laboratory at Lindsay, Calif., for the study of citrus insects, and W. S. Ballard, of the Bureau of Plant Industry, who is located at Fresno, are other representatives of the Department of Agriculture on this committee. W. C. Jacobsen, of the Bureau of Plant Quarantine and Pest Control of the California State Department of Agriculture, is chairman, and John W. Guyler, of the Advisory Board, California Peach and Fig Growers, Inc., is secretary of the committee. The University of California is represented by Ira J. Condit, Associate in Subtropical Horticulture, Agricultural Experiment Station, Leroy B. Smith, Assistant State Leader (southern counties), Extension Service, and Ralph E. Smith, Head of the Division of Plant Pathology. Other members of the committee are Fred P. Rouillard, Horticultural Commissioner, Fresno County, Frank R. Brann, Horticultural Commissioner, Tulare County, Dwight K. Grady, Secretary of the Dried Fruit Association of California, Ward B. Minturn, President of the California Peach and Fig Growers, Inc., O. G. Brundage, fruit grower, and W. W. Bacon, Superintendent of the Forkner Fig Gardens.

Up to November 20 A. O. Larson and C. K. Fisher, of the field laboratory at Modesto, Calif., and their assistants, handled during the bean harvest just ended, in and about Modesto, 3,177 samples of beans, sent them for inspection. During the harvest of 1927 they handled 1,967 such samples. The greater amount of work in this line in the present season is indicative of the increasing sentiment among bean growers in favor of the present method of control.

A. O. Larson attended a convention of the California Horticultural Commissioners, recently held at Riverside, and gave a talk on bean weevils and their control. E. T. Hamlin, Horticultural Commissioner of Stanislaus County, Calif., discussed the part his organization has played in the campaign for the suppression of the bean weevil, in which the Bureau of Entomology and the California State and County representatives are cooperating.

The furniture carpet beetle, Anthrenus vorax, has for years been reported only from Washington, D. C., but large numbers of this pest were found recently in house furnishings on their arrival in Chicago, after they had been stored for a considerable time in Washington. The incident is of interest as indicating how easily these insects may be carried from one part of the country to another.



## COTTON INSECT INVESTIGATIONS

B. R. Coad, in Charge

Perry A. Glick, who was injured in an airplane crash in Mexico on September 17, returned to duty November 12 from the United States Marine Hospital, New Orleans, La.

V. V. Williams left Tallulah November 5, to resume study of the *Bucculatrix* on cotton in the vicinity of Calexico, Calif.

M. T. Young, G. L. Smith, and R. W. Moreland left Tallulah November 23 for Tucson, Ariz., where they will engage in scouting for *Thurberia* weevils.

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## DECIDUOUS-FRUIT INSECT INVESTIGATIONS

A. L. Quaintance, in Charge

The meeting of West Texas Pecan Growers at Brownwood, November 15 and 16, was well attended and considerable interest in the Bureau's pecan insect work was manifested. Unfortunately, bad weather prevented a number from visiting the Bureau's laboratory at Brownwood who would have liked to do so. At this meeting Mr. H. S. Adair, of the field laboratory, gave a talk on "Some Practical Methods of Controlling Injurious Pecan Insects of this Section."

Fred E. Brooks, in charge of the field laboratory at French Creek, W. Va., was in Washington on November 3 for a conference in relation to work on insects which are attacking chestnuts.

C. T. Blanz, who has been employed temporarily on control of the chestnut weevil in the Government chestnut orchard at Bell, Md., terminated his services for the Bureau on November 1.

## Contributions from the Japanese-Beetle Laboratory

On November 1 Dr. H. W. Allen visited the United States National Museum to place there a number of types of *Tiphia* which are described in a forthcoming paper by Allen and Jaynes.

On November 2 John Glassford, Chief Chemist of McCormick and Company, Baltimore, Md., visited the Laboratory to confer with E. R. Van Leeuwen.



A. Salam Fauzy, Plant Quarantine Agent, of Alexandria, Egypt, and Max Kisliuk, Jr., Inspector from Philadelphia, visited the Laboratory November 15.

On November 19 Luther Brown, of the field laboratory at Sligo, Md., visited the Japanese-Beetle Laboratory.

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#### TRUCK-CROP INSECT INVESTIGATIONS

J. E. Graf, in Charge

K. L. Cockerham, Biloxi, Miss., spent November 6 and 7 in Montgomery, Ala., in conference with officials of the State Department of Agriculture on the problem of the sweet potato weevil.

Rodney Cecil, in charge of the field laboratory at Geneva, N. Y., has been transferred to Columbus, Ohio, effective November 12.

K. L. Cockerham, Biloxi, Miss., P. K. Harrison and M. Brunson, Picayune, Miss., F. A. Wright, Bay St. Louis, Miss., and S. C. Brummitt, Grand Bay, Ala., conferred with the workers of the Mississippi State Plant Board at A. & M. College, November 26 to 28, on the problem of eradicating the sweet potato weevil in Mississippi. Plans were made for completing the work in this line.

Frieda B. Hinnenkamp, a graduate of the University of Minnesota, has recently been given a probationary appointment as Junior Entomologist at the field laboratory at Twin Falls, Idaho.

Charles F. Henderson, formerly an agent of this division on the sugar-beet leafhopper project at Berkeley, Calif., has been appointed Assistant Entomologist, pending certification, and will be located at Twin Falls, Idaho.

Everett C. Tatman, formerly a field assistant of this division, working on the celery leaf-tyer at Sanford, Fla., has been appointed Assistant Scientific Aid, pending certification, and will continue his investigations at the field laboratory at Sanford.

The temporary appointments of R. W. McGinnis, Corvallis, Oreg., and H. L. Dees, Grand Bay, Ala., field assistants, have been terminated.



LIBRARY

Mabel Colcord, Librarian

NEW BOOKS

Anderson, James.

The conclusion of letters on cochineal. . . 21 p. Madras, Chaord, 1790.

Carpenter, Kathleen E.

Life in inland waters, with special reference to animals. With an introduction by Julian S. Huxley. 267 p., illus. London. Sidgwick and Jackson, 1928. ("References" at ends of chapter.)

Chopard, Lucien.

Revision of the Indian Gryllidae. Records of the Indian Museum, v. 30, pt. 1, p. 1-36, illus. Calcutta, April, 1928.

Feytaud, Jean.

La question doryphorique au début de la campagne 1928. Revue de Zool. Agric., v. 27, No. 5, p. 69-84, May, 1928.

Gregory, G. T., and Davis, J. J.

Common garden pests, what they are and how to control them. 150 p., illus. Des Moines, Better Homes and Gardens, 1928.

Horae macrolepidopterologicae regionis palaearcticae. . . ed. Otto Bang-Haas. v. 1, 128 p., illus. Dresden, Blasewitz, Staudinger & Bang-Haas, 1927.

International corn borer investigations. Scientific reports 1927-1928, edited by Tage Ellinger. 237 p., illus., maps. Chicago, International Live Stock Exposition, Union Stock Yards, 1928.

King, H. H.

The ticks (Ixodoidea) of the Sudan. 15 (6) p., plate. (Khartoum) Dec., 1926. (Wellcome Tropical Research Laboratories, Entomological Section, Bulletin No. 23.)

Lessert, R. de.

Araignées du Congo recueillies au cours de l'expédition organisée par l'American Museum (1909-1915). Revue Suisse de Zool., v. 34, p. 405-475, 1927, and v. 35, p. 303-352, 1928, illus.

Mellon, M. G.

Chemical publications--their nature and use. Ed. 1. 253 p. New York, McGraw-Hill Book Company, Inc., 1928. (International Chemical Series, James F. Norris, consulting editor.)

Metcalf, C. L., and Flint, W. P.

Destructive and useful insects; their habits and control. Ed. 1, 918 p., illus. New York, McGraw-Hill Book Company, Inc., 1928. (Half title: McGraw-Hill publications in the zoological sciences.) (Contains references.)

Mordvilko, A.

Les pemphiens des pistachiers et leurs formes anolocycliques. Mem. Soc. Zool. de France, v. 28 (1927), p. 61-75. (Liste des auteurs cités, p. 74-75.)

Needham, J. G.

Elementary lessons on insects. . . viii, 210 p., illus. Springfield, Ill., Charles C. Thomas, 1928.



Paoli, G.

Antonio Berlese. Mem. Soc. Ent. Ital., v. 6, fasc. 1, p. 55-84. port., 1928.

Schenkling, S., ed.

Coleopterorum catalogus, pt. 95, 96, 97. Berlin, W. Junk, 1928. Contents: Pt. 95, Silphidae II, by M. H. Hatch, p. 63-244; pt. 96, Melasidae, by S. Schenkling, 110 p.; pt. 97, Carabidae: Mor-molycinae, Harpalinae I, by E. Csiki. 226 p.

Snodgrass, R. E.

Morphology and evolution of the insect head and its appendages. 158 p., illus. Washington, Published by the Smithsonian Institution, Nov. 20, 1928. (Smithsonian Misc. Coll., v. 81, No. 3. Publication 2971. References, p. 155-158.)

Weber, G. A

. . . . The food, drug, and insecticide administration, its history, activities and organization. 134 p. Baltimore, Johns Hopkins University Press, 1928. (Institute for Government Research. Monographs of the U. S. Government No. 50. Bibliography, p. 113-129.)



